Zen 120

0.91 cu. in. displacement 2-cycle
1.20 cu. in. displacement 4-cycle

Radio required: 5 channels, 6 servos airplane radio

Specifications:
- Wing Span: 71.0 in / 1800mm
- Wing Area: 955 sq in / 61.6 sq dm
- Flying Weight: 10.0 lbs / 4500g
- Fuselage Length: 71.5 in / 1820mm

Warning! This model is not a toy.
It is designed for maximum performance. Please seek advice if one is not familiar with this kind of engine powered precision model. Operating this model without prior preparation may cause injuries. Remember, safety is the most important thing. Always keep this instruction manual at hand for quick reference.

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BEFORE YOU BEGIN

1. Read through the manual before you begin, so you will have an overall idea of what to do.

2. Check all parts. If you find any defective or missing parts contact your local dealer. Please DRY FIT and check for defects for all parts that will require CA or Epoxy for final assembly. Any parts you find to be defective after the gluing process may be difficult to remove for warranty replacement. The manufacturer will replace any defective parts, but will be difficult to extend to the good parts that are good before gluing to defective parts during assembly.

3. Symbols used throughout this instruction manual comprise of the following:

- **AB**: Apply epoxy glue.
- **L/R**: Assemble left and right sides the same way.
- **C.A**: Apply instant glue (C.A. glue, super glue.)
- **Ensure smooth non-binding movement while assembling.**
- **Peel off shaded portion covering film.**
- **Cut off shaded portion.**
- **Drill holes with the specified diameter (here: 3mm).**
- **Must be purchased separately!**
- **Pay close attention here!**
- **Warning!**
  
  Do not overlook this symbol!
Parts List

1. FUSELAGE & BELLY PAN -- 1 set.
2. MAIN WING -- 1 pc.
3. STABILIZER & ELEVATOR -- 1 set
4. RUDDER -- 1 pc.
5. CANOPY -- 1 set
6. COWLING -- 1pc.
   TRANSPARENT 3D TEMPLATE --1 pc.
7. PILOT (#PC001063A) -- 1 pc.
8. ALUMINUM SPINNER, Ø70mm -- 1 pc.
9. ENGINE MOUNT PL 5911-120 -- 1 set
10. ANTI-VIBRATION MOUNT 4C-120 -- 1 set
11. FUEL TANK 450cc -- 1 set
12. SPONGE 10 x 80 x 200mm (For Radio Equipment) -- 2 pcs
13. TAIL LANDING GEAR -- 1 set
14. MAIN WHEEL Ø55mm -- 2 pcs
15. TAIL WHEEL Ø30mm -- 1 pc.
16. ELEVATOR LINKAGE -- 1 set
17. PUSHROD & PULLCABLE --
   COPPER TUBE Ø2.0 x Ø2.4 x 8mm
   (For Rudder & Elevator) --8 pcs
   METAL ROD Ø1.8 x 27mm (For Rudder & Elevator) --4 pcs
   METAL ROD Ø1.8 x 130mm w/Threads (For Rudder & Elevator) --4 pcs
   METAL ROD Ø1.8 x 115mm w/Threads (For Elevator) -- 2 pcs
   METAL ROD Ø1.8 x 90mm (For Elevator) -- 2 pcs
   WIRE Ø0.8 x 1000mm (For Rudder) -- 2 pcs
   WIRE Ø0.8 x 910mm (For Elevator) -- 2 pcs
18. THROTTLE PUSHWIRE Ø1.2 x 320mm
    w/Plastic tube d2 x d3 x 180mm -- 1 set
19. WOODEN PARTS --
   Balsa 14 x 10 x 111mm (For Fixing Fuel Tank) --1 pc.
   PLYWOOD 12 x 3 x 107mm (For Throttle Servo) --1 pc.
   PLYWOOD 12 x 3 x 108mm (For Throttle Servo) --1 pc.
   PLYWOOD 36 x 2 x 60 mm (For Elevator Servo) --2 pcs
   PLYWOOD 65 x 3 x 114mm (For Throttle Servo) --2 pcs
20. PLASTIC PARTS --
   CLEVIS -- 8 pcs
   SILICON GROMMET Ø1.5 x Ø2.6,5mm
   (For Cowling & Canopy) -- 11 pcs
   TRI-HORN M3 x 14mm(L) -- 4 sets
   TRI-HORN M3 x 14mm(L) (Non-Base For Rudder) -- 2 sets
   STRAPR -- 4 pcs
21. METAL PARTS --
   LINKAGE CONNECTOR 2.1mm -- 3 sets
   COLLAR 2.8mm w/screw -- 1 set
   STABILIZER JOINER Ø3 x 96mm -- 1 pc.
   STABILIZER JOINER Ø9.6 x 294mm -- 1 pc.
   NUT 2mm -- 3 pcs
   NYLON INSERT LOCK NUT 3mm -- 4 pcs.
   SCREW P3 x 12mm -- 4 pcs.
   SCREW PM2 x 25mm -- 12 pcs
   SCREW PM2 x 30mm -- 3 pcs
   SCREW PM4 x 30mm -- 2 pcs
   SCREW PWA2 x 12mm -- 6 pcs
   SCREW PWA2.6 x 12mm -- 6 pcs
   SCREW PWA2.6 x 12mm -- 6 pcs
   SCREW PWA2.6 x 12mm -- 6 pcs
   SOCKET HEAD SCREW M3 x 35mm -- 4 pcs
   SOCKET HEAD SCREW M6 x 30mm -- 4 pcs
   WASHER d3 x 12mm -- 8 pcs
   WASHER d4 x 15mm -- 2 pcs
   WASHER Ø6 x 18mm -- 4 pcs
22. FUEL TUBE Ø6 x 5mm -- 12 pcs
23. DECALS : ST200 040 -- 1 set
1. Main Wing
   Peel off shaded portion covering film.

2. Aileron Servo
   Peel off shaded portion covering film.

3. Aileron Servo
   PM 2 x 25mm Screw
   Straper φ1.8 x 130mm
   Fuel Tube φ6 x 5mm
   Clevis
   Ring
   Tri-horn
   2mm

L/R
4 Main Landing Gear

- KA 3 x 14mm Screw (8)
- 3mm Set Screw (2)
- 5.1mm Collar (2)
- Wheel Ø55mm

5 Retract Servo

- LINKAGE CONNECTOR
  - 3 x 3mm Set Screw (2)
  - Linkage Connector (2)
  - 2mm Nut (2)
  - 2mm Washer (2)

6 Stabilizer

- PA 3 x 12mm Screw (2)
- 3 x 8mm Set Screw (2)

Stabilizer Joiner Ø 3 x 96mm

• Adjust the stabilizer up or down
  - 3 x 8mm Set Screw
  - PA 3 x 12mm
7 Vertical Fin / Rudder

8 Tail Landing Gear
- PA 3 x 12mm Screw (2)
- 3mm Set Screw (1)
- 2.6mm Collar (1)

9 Engine Mount
- M6 x 30mm Screw (4)
- 6mm Washer (4)

Engine Mount PL 5911120

- Apply thread locker to screws.
- Blind nuts are off-centered to keep the spinner at the fuselage axis.
10 Fuel Tank

Install Balsa & Plywood for fixing fuel tank
Balsa 14x10x111mm
Fuel Tank
Bottom View

11 Engine

- M3 x 35mm Screw: 4
- d3 x D12mm Washer: 8
- 3mm Nylon Insert Lock Nut: 12
- KM 3 x 20mm Screw: 8

! Illustration is for inverted mounting. You can mount the engine upright or sideways simply by rotate the engine mount. Thrust angles will not be affected.

12 Elevator Linkage

- PWA2 x 12mm Screw: 6
- 3mm Set Screw: 1

Metal Rod Ø 1.8 x 27mm
Copper Tube
Elevator Pullwire
Plastic Collar
You may need only one spacer.
16 Servo Set

- **Linkage Connector**
  - 3 x 3mm Set Screw: 1
  - Linkage Connector: 1
  - 2mm Nut: 1
  - 2mm Washer: 1

- Included with the Radio Set.

- Throttle Servo

- Please refer to attached sheet for linkage connector installation.

17 Radio Equipment

- Install and arrange the servo as shown in the diagram.

18 Main Wing

- PM 4 x 30mm Screw: 2
- d4 x D15mm Washer: 2
22 Wing Setting
Adjust the wing and fuselage configuration as in the diagrams.

23 Control Throws
Adjust the control throws as shown in the diagram. These throws are good for general flying. You can adjust according to your personal preference.

- Elevator: 21mm
- Rudder: 56mm
- Aileron: 15mm

24 C.G.
The ideal C.G. position is 195mm (7.7 in) behind the leading edge measured at where the wing meets the fuselage. In order to obtain the C.G. specified, add weight to the fuselage or move the battery position. Check the C.G. before flying.
**Warning!**

Important Safety Precautions

# First time flyer should never fly by himself / herself. Assistance from experienced flyer is absolutely necessary.

# Pre-flight adjustment must be done before flying, it is very dangerous to fly a badly pre-adjusted aircraft.

# Zen 120 is specially designed to be powered by 2C 0.91 or 4C 1.20 engine, using a more powerful engine does not mean better performance. In fact, over powered engine may cause severe damage and injuries.

# Make sure the air field is spacious, never fly the plane too close to people and never get too close to a running propeller.

# If you find wrinkles on the covering as a result of weather changes, you can use hot iron to remove the wrinkles. Please begin with lower temperature setting and gradually raise the temperature until the wrinkles are gone. Too hot an iron may damage the covering.

# Check and re-tighten up all factory assembled screws, use thread locker if applicable.

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**ANTI-VIBRATION MOUNT INSTALLATION**

For Engine Mount (PL5911120)

1. Make sure the rounded edges are facing the shock absorbing SILICON PAD.

   - 1 — KM 3 x 18mm Screw
   - 2 — Copper Tube
   - 3 — 3mm Nylon Insert Lock Nut
   - 4 — 3mm Washer
   - 5 — PM 3 x 35mm Screw

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**Landing gear**

Should you need to bend the landing gear wire, use the radio control to open or close the gear to 25% from fully retracted position and switch off the receiver. It is safe to bend the wire in this position. Bending the wire in fully open position may damage the supporting structure.